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ABSTRACT

A review of educational research reveals that free and inexpensive materials are used today to a much greater extent than they had been in the past. Two studies, sponsored by the American Iron and Steel Institute, are evidence of the producer's interest in determining the strengths and weaknesses of the materials being sent into classrooms and utilized in instructional programs. An analysis of the data of these studies of teacher opinions in relation to free filmstrips and printed materials, ED 072 992 and SO 006 300 respectively, is presented in the major portion of this paper. Tables illustrate the similarity of the samples used in both studies, the effectiveness of the materials, and the opinions expressed concerning evaluation of free materials compared to commercially produced materials. The second major, but brief, portion of the paper discusses data interpretation and recommendations. It is suggested that producers concentrate on narrowing the content focus, and that teachers be more selective in choice of materials before using them in the classroom. The final recommendation is for further study by producers of the ways in which teachers utilize free materials. A bibliography concludes the paper. (KSM)

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USE AND MISUSE OF INDUSTRY SPONSORED MATERIALS

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FOREWORD

Materials for this presentation have been abstracted from two documents. Complete data may be obtained from:

DuVall, Charles R., et. al., "A Study of Teacher Opinions Concerning Selected Free Filmstrips Provided by the American Iron and Steel Institute to Schools Throughout the United States," Research in Education, 8:6 (June, 1973) p. 97 (ED 072 992).

DuVall, Charles R. et al., "A Study of Teacher Opinions and Evaluations Concerning Selected Free Printed Materials Provided by the American Iron and Steel Institute to Individuals Throughout the United States," Research in Education (in press - scheduled for February, 1974 release).

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INTRODUCTION

A review of educational research reveals that free and inexpensive materials are used today to a much greater extent than they had been in the past. The use of these materials by teachers is encouraged by the recognized experts in the field of education, despite certain inherent limitations implied by the fact that they are free. Studies conducted within the last quarter of a century showed that over 90 per cent of the classroom teachers surveyed had used some form of sponsored materials. Studies of school policies and administrative procedures reveal that the use of these materials is permitted and often encouraged.

The producers of free materials are interested in their utilization by teachers. These studies, sponsored by the American Iron and Steel Institute, Washington, D.C. are evidence of the producer's interest in determining the strengths and weaknesses of the materials being sent into classrooms throughout the United States and utilized in the instructional programs of these schools.

DESIGN AND RATIONALE

To obtain the desired information a questionnaire was developed, accompanied by a cover letter which explained the purpose of the studies. Similar instruments were used in both studies, permitting comparisons and generalizations.

According to established patterns found in research, certain information, details, and form were included in the design of the cover letter. Such items were: the purpose of the study, the importance of the study to the respondent, the value of the respondent's reply, and the signature and the title of the educator involved in this particular study. (Borg: 214-15) The cover letter did not mention any confidential treatment of the data. A summary of the findings was promised. (Young:205) General attractiveness was stressed. Bold pica type printing was used on good quality white bond paper bearing the official letterhead of Indiana University at South Bend. (Young:203)

According to Good and Scates, questionnaires constitute a major, reliable instrument for data gathering in various survey studies. (606) The mailed questionnaire was used because personal contact was impossible in most instances and was unnecessary in these studies. Acknowledging that the mailed questionnaire technique possessed several disadvantages such as address problems due to possible widespread mobility (Snelling:127) and the possibility of some replies

being incomplete or not returned, this technique was still employed in gathering data for these studies due to its proved general effectiveness and its relatively low cost. (Droege:256)

The beginning statements requesting grade level, age, and sex were utilized to determine possible relationships between demographic data and materials utilization of teachers and their opinions concerning the materials. In the ordering of questions items were placed in a funnel structure, a psychologically and logically sound sequence, with simple, interesting, and neutral questions preceeding the more difficult, crucial, and personal ones. (VanDalen:257)

Questions were kept short because brevity was stressed in the research dealing with instrument development. The question length did not usually exceed 20 words, with every word being familiar and concise, thus involving a minimum of the respondents' time. (Oppenheim:56) Both closed and open form questions were developed and employed in these instruments. The closed form type question, requiring checked responses was used to secure categorized data. Open form questions were used in order to provide a more concise picture of the respondents' feelings relating to the materials under study. (VanDalen:256)

In both studies 400 names were randomly selected for each piece of material. A total of 1,200 names was selected for

each study and questionnaires were mailed to these individuals. A follow-up letter was mailed to nonrespondents to obtain a sufficiently high per cent of usable returns. This mailing technique was adapted from the procedure suggested by Kephart and Bressler. (123-32)

PRESENTATION AND ANALYSIS OF THE DATA

This section presents an analysis of the data relating to the two studies: A Study of Teacher Opinions Concerning Selected Free Filmstrips Provided by the American Iron and Steel Institute to Schools Throughout the United States (published August, 1972), and A Study of Teacher Opinions and Evaluations Concerning Selected Free Printed Materials Provided by the American Iron and Steel Institute to Individuals Throughout the United States (published September, 1973).

Comparisons of data from the two studies will be made where appropriate. Due to modification of the basic instrument used in the studies, comparisons are not possible in all cases. The reader is advised that he may obtain copies of both studies from the source cited in the foreword of this paper.

Sample similarity. Tables 1 and 2 are presented to illustrate the similarity of the samples used in both studies. In each case 1,200 questionnaires were mailed to randomly selected persons from mailing lists provided by the American Iron and Steel Institute. A similar per cent of responses was obtained in each study (Filmstrips - 70 per cent, and Printed Materials - 68 per cent). In the original studies, an adjustment for undeliverable queries was made. With this adjustment the per cent of responses was Filmstrips - 74 per cent and Printed Materials - 75 per cent. Complete details

TABLE 1 TYPE OF SCHOOL DISTRICT IN WHICH RESPONDENT TAUGHT CLASSIFIED BY POPULATION SIZE - FILMSTRIPS

Size	f	Per Cent Response
Rural	130	16
Suburban	168	20
Village (under 10,000)	119	14
Town (10-50,000)	163	19
City (50,000+)	183	22
No indication	75	9
Total	838	100

TABLE 2 TYPE OF SCHOOL DISTRICT IN WHICH RESPONDENT TAUGHT CLASSIFIED BY POPULATION SIZE - PRINTED MATERIALS

Size	f	Per Cent Response
Rural	108	13
Suburban	130	16
Village (under 10,000)	131	16
Town (10-50,000)	223	28
City (50,000+)	189	23
No indication	32	4
Total	813	100

are contained in the studies cited. In view of the relatively high rate of responses, generalizations were drawn to the populations sampled. Indeed, it is believed that the American Iron and Steel Institute materials are representative enough of free and inexpensive materials as a whole that tentative generalizations may be drawn to similar materials.

Examination of the data presented in Tables 1 and 2 led to the conclusion that the respondents in the two studies are similar in nature. In no case did the per cent of response within any category vary more than 10 per cent and in five of the six categories the difference was five per cent or less.

The data dealing with level of training, as indicated by the educational background of the respondents, showed similar patterns between the two samples. These data are presented in Tables 3 and 4. While the educational backgrounds of the respondents appeared to be similar, the greatest divergences between the two samples were at the levels designated "Bachelor's degree" and "Masters degree plus." In no case did the differences between groups within the sample exceed ten per cent; therefore, the samples were considered to be similar.

When the responses were analyzed according to age ranges it was found that almost two of every three persons in both studies were 40 years of age or younger. However, examination of the data presented in Tables 5 and 6 revealed that there was a somewhat larger difference in the per cent

TABLE 3 EDUCATIONAL BACKGROUND OF RESPONDENTS - FILMSTRIPS

Degree	f	Per Cent Response
Less than bachelor's	27	3
Bachelor's tegree	99	12
Bachelor's degree plus	281	33
Master's degree	109	13
Master's degree plus	257	31
No level indicated	65	8
Total	838	100

TABLE 4 EDUCATIONAL BACKGROUND OF RESPONDENTS - PRINTED MATERIALS

Degree	f	Per Cent Response
Less than bachelor's	41	5
Bachelor's degree	170	21
Bachelor's degree plus	312	38
Master's degree	99	12
Master's degree plus	176	22
No level indicated	15	2
Total	313	100

TABLE 5 AGE RANGE OF RESPONDENTS - FILMSTRIPS

Age Range	f	Per Cent Response
21-25 years	147	17
26-30 years	156	19
31-40 years	212	25
41-50 years	168	20
Over 50 years	89	11
No indication	66	8
Total	838	100

TABLE 6 AGE RANGE OF RESPONDENTS - PRINTED MATERIALS

Age Range	f	Per Cent Response
21-25 years	256	31
26-30 years	222	27
31-40 years	161	20
41-50 years	102	13
Over 50 years	59	7
No indication	13	2
Total	813	100

of response between age ranges, particularly with respect to the younger groups, that is those designated 21-25 and 26-30. On the whole, the sample designated as "printed materials" tended to be appreciably younger than those who responded to the instrument assessing the filmstrips. These data may have implications for those preparing free materials of a printed nature, as contrasted with those organizations which deal in materials of the "audio-visual" type.

Effectiveness of materials. One of the aspects of the problem which interests both industry sponsors and users of free and inexpensive materials alike is an assessment of their effectiveness. The teacher who uses the materials is probably in the best position to render a judgment concerning this matter.

The following data are presented in an effort to analyze the effectiveness of the materials. These materials are examined from several different perspectives. The reader will note that the basic response mode was altered from the first study to the second. The mode was changed from "outstanding-good" to "very effective-effective." This change was made to better express the meaning intended in securing responses from the sample. Data dealing with the teachers' judgments concerning the effectiveness of both the filmstrips and printed materials provided by the

American Iron and Steel Institute are presented in Tables 7, 8, 9, and 10.

When the educational level of the respondents (Tables 7 and 8) was used as the variable in the analysis, little difference was noted in the assessment of the two types of materials. The overall responses toward the materials tended to be highly positive and supportive of the efforts of the producers. It should be noted that the teachers with less than a bachelor's degree tended to be more positive in the assessment of the worth of the filmstrips than the printed materials. When the negative aspect of the teachers' assessments was considered it was noted that only about one per cent tended to rate these materials as "poor" or "having no value."

Examination of the same data, analyzed by relative size of the school district, showed a rather consistent positive opinion. Little discernible difference in the response pattern was noted. These data are presented in Tables 9 and 10.

It should be noted that a certain lack of clarity may have been introduced in the comparison between the two studies by the changing of descriptors used in the two questionnaires. The change was made from "outstanding-good-fair-poor" to "very effective-effective-somewhat effective-no value" to make the descriptors more definitive,

TABLE 7 OPINIONS CONCERNING EFFECTIVENESS OF FILMSTRIPS WHEN CONSIDERED BY EDUCATIONAL LEVEL OF RESPONDENTS, EXPRESSED AS A PER CENT OF RESPONSES

Degree	f	Out-standing	Good	Fair	Poor	No Response
Bachelor's-	27	37	41	4	0	18
Bachelor's	99	16	62	2	0	20
Bachelor's+	281	25	56	4	0	15
Master's	109	21	58	6	0	15
Master's+	257	28	53	5	-1	13
No indica-tion	65	2	5	2	0	91
Total	838	23	51	4	0	22

TABLE 8 OPINIONS CONCERNING EFFECTIVENESS OF PRINTED MATERIALS WHEN CONSIDERED BY EDUCATIONAL LEVEL OF RESPONDENTS, EXPRESSED AS A PER CENT OF RESPONSES

Degree	f	Very Effect.	Effective	Somewhat Effect.	No Value	No Response
Bachelor's-	41	10	24	22	0	44
Bachelor's	170	12	47	23	2	16
Bachelor's+	312	12	50	22	2	14
Master's	99	19	44	24	0	13
Master's+	176	16	44	26	1	13
No indication	15*	--	--	--	--	--
Total	813	14	46	23	1	16

*Not analyzed

TABLE 9 OPINIONS CONCERNING EFFECTIVENESS OF FILMSTRIPS CONSIDERED BY TYPE OF USING DISTRICT, EXPRESSED AS A PER CENT OF RESPONSES

District	f	Out-standing	Good	Fair	Poor	No Response
Rural	130	32	52	4	0	12
Suburban	168	27	55	4	0	14
Village	119	20	61	6	0	13
Town	163	23	52	4	0	21
City	183	20	57	5	1	17
No indi-cation	75	7	11	0	0	82
Total	838	23	51	4	0	22

TABLE 10 OPINIONS CONCERNING EFFECTIVENESS OF PRINTED MATERIALS CONSIDERED BY TYPE OF USING DISTRICT, EXPRESSED AS A PER CENT OF RESPONSES

District	f	Very Effective	Effective	Somewhat Effective	No Value	No Response
Rural	108	15	55	18	0	12
Suburban	130	20	42	25	1	12
Village	131	16	53	17	2	12
Town	223	11	42	29	1	17
City	189	11	44	24	3	18
No indication	32	9	15	10	0	66
Total	813	14	45	23	1	17

and hence more meaningful. The idea of modification in the design of the basic instruments was introduced earlier. It should be noted that in the study dealing with printed materials the per cent of teachers indicating that the materials were "somewhat effective" is higher than those teachers who indicated that the filmstrips were "fair." It is the opinion of the researchers that the change in descriptors was responsible for the variation in response pattern noted. It is also their opinion that the descriptors used in the second study dealing with printed materials were more definitive, even though this change evoked a somewhat lower relative rating.

One of the most frequently voiced concerns regarding free and inexpensive materials is the fact that they are sponsored and that this sponsorship may have an effect upon their use in the instructional program. Another inference sometimes made is that sponsorship has a negative connotation - rarely positive. In order to ascertain the teachers' judgments of this assumption the question was posed. Data dealing with these responses are presented in Tables 11, 12, 13, and 14.

When the overall response pattern was considered, approximately two-thirds of the respondents indicated that the fact that the materials were industry sponsored was either "unobtrusive" or had "no effect." Only one in 20

TABLE 11 OPINIONS OF RESPONDENTS REGARDING FACT THAT MATERIALS WERE INDUSTRY SPONSORED, ANALYZED BY EDUCATIONAL LEVEL, EXPRESSED AS A PER CENT OF RESPONSES - FILMSTRIPS

Degree	f	In-trude	Unob-trusive	No Effect	Not Determ.	No Response
Bachelor's-	27	11	7	52	4	26
Bachelor's	99	1	19	49	8	23
Bachelor's+	281	1	18	52	10	19
Master's	109	2	21	48	11	18
Master's+	257	1	20	49	13	19
No indication	65	0	2	5	2	91
Total	838	1	18	47	10	24

TABLE 12 OPINIONS OF RESPONDENTS REGARDING FACT THAT MATERIALS WERE INDUSTRY SPONSORED, ANALYZED BY EDUCATIONAL LEVEL, EXPRESSED AS A PER CENT OF RESPONSES - PRINTED MATERIALS

Degree	f	In-trude	Unob-trusive	No Eff.	No Determ.	No Response
Bachelor's-	41	2	5	41	32	20
Bachelor's	170	4	11	48	25	12
Bachelor's+	312	5	19	40	22	14
Master's	99	3	22	45	17	13
Master's+	176	9	18	45	16	12
No indication	15*	-	-	-	-	-
Total	813	5	17	44	21	13

*Not analyzed

TABLE 13 OPINIONS OF RESPONDENTS REGARDING FACT THAT MATERIALS WERE INDUSTRY SPONSORED, PER CENT OF RESPONSES CLASSIFIED BY SCHOOL DISTRICT SIZE - FILMSTRIPS

District	f	In-trude	Unob-trusive	No Effect	No Determ.	No Response
Rural	130	2	20	56	9	13
Suburban	168	0	21	54	7	18
Village	119	2	16	54	13	15
Town	163	0	20	42	14	24
City	183	4	17	48	11	20
No indi-cation	75	0	4	8	1	87
Total	838	1	18	47	10	24

TABLE 14 OPINIONS OF RESPONDENTS REGARDING FACT THAT MATERIALS WERE INDUSTRY SPONSORED, PER CENT OF RESPONSES CLASSIFIED BY SCHOOL DISTRICT SIZE - PRINTED MATERIALS

District	f	In-trude	Unob-trusive	No Eff.	Not Determ.	No Response
Rural	108	1	22	43	21	13
Suburban	130	6	18	43	23	10
Village	131	6	16	48	18	12
Town	223	7	13	45	22	13
City	189	5	20	40	1[illegible]	16
No indication	32	0	0	19	22	59
Total	813	5	16	43	21	15

of the respondents indicated that industry sponsorship of these printed materials affected their usefulness. In the case of the filmstrips only one per cent of the sample indicated intrusion. Basically, the sponsors of these materials should be pleased with these results.

Evaluation and use. Of prime concern to the producers of free and inexpensive materials is the use made and the evaluation of these materials by the users. Because of the differences between filmstrips and printed materials, the instruments used in obtaining the basic data for the studies were modified and adapted to reflect these differences. The analyses presented in this section of the report are of necessity, different, and in most cases mutually exclusive.

Teachers who use free filmstrips, in the opinion of the researchers, consciously or subconsciously compare the free materials to commercially produced filmstrips and decide to use the best of the available instructional resources in their teaching. Respondents were asked to indicate assessment of the free filmstrips provided by the American Iron and Steel Institute as compared to commercially produced materials dealing with similar topics. Approximately 50 per cent of them indicated they believed the free filmstrips provided were either "superior to most" or "better than most" of the commercially produced materials with which they were familiar. Another one-fourth of the

respondents indicated that these materials were "good as most" of the materials with which they were acquainted. Perhaps the most encouraging aspect of the results of this question was that only one per cent of the respondents indicated that the filmstrips were in need of improvement. These data, analyzed by both the educational level of the respondents and the size of the school district in which the materials were used, are presented in Tables 15 and 16.

In the study dealing with printed materials an attempt was made to determine the reasons teachers had for requesting materials as well as the way in which they employed the materials after receipt from the sponsoring agency. Another unique feature of printed materials, when contrasted with filmstrips, is that they are consumable, whereas the filmstrips are intended to be retained and reused. This fact requires the producer to replenish and update the supply of printed materials at frequent intervals if the materials are to continue to be of value.

As indicated in Table 17 teachers have many reasons for requesting printed materials from sponsors. Over half of the respondents replied that they were seeking curriculum materials. The second most frequently indicated reason was that they were building a resource file. Other reasons which occurred with some frequency were seeking "illustrative materials," and "materials which could be used with the entire class."

TABLE 15 OPINIONS OF RESPONDENTS CONCERNING EVALUATION OF MATERIALS WHEN COMPARED TO COMMERCIALLY PRODUCED MATERIALS, ANALYZED BY EDUCATIONAL LEVEL, EXPRESSED AS A PER CENT OF RESPONSES - FILMSTRIPS

Degree	f	Super. to Most	Better Than Most	Good as Most	Improvement Needed	No Response
Bachelor's-	27	19	41	11	4	25
Bachelor's	99	9	40	27	0	24
Bachelor's+	281	15	36	27	2	20
Master's	109	13	35	34	2	16
Master's+	257	16	39	30	1	14
No indication	65	0	2	6	0	92
Totals	838	14	35	27	1	23

TABLE 16 OPINIONS OF RESPONDENTS CONCERNING EVALUATION OF MATERIALS WHEN COMPARED TO COMMERCIALLY PRODUCED MATERIALS, ANALYZED BY DISTRICT SIZE, EXPRESSED AS A PER CENT OF RESPONSES - FILMSTRIPS

District	f	Super. to Most	Better Than Most	Good as Most	Improvement Needed	No Response
Rural	130	18	41	28	1	12
Suburban	168	14	38	31	0	17
Village	119	13	37	31	3	16
Town	163	16	36	25	2	21
City	183	14	36	30	1	19
No indication	75	1	9	7	0	83
Total	838	14	35	27	1	23

TABLE 17 NUMBER AND PER CENT OF RESPONSES INDICATING PURPOSE FOR REQUESTING MATERIAL FROM A.I.S.I. - PRINTED MATERIALS

Purpose	Env. & Indust.		Mark Steel		Steel Scien.		Totals	
	f	%	f	%	f	%	f	%
Looking curr. mtl.	174	59	152	53	108	47	434	53
Illus. Mtls.	37	13	44	15	28	12	109	13
Curious	36	12	41	14	19	8	96	12
Build res. file	68	23	56	19	123	53	247	30
Mtl's/Capable sts	12	4	9	3	9	4	30	4
Mtl's/Less Capabl	16	5	18	6	3	1	37	5
Mtl's/Enitre Cl.	50	17	46	16	42	18	138	17
Other Reasons	13	4	11	4	17	7	41	5

No Totals: Multiple responses received

The instructional level at which these materials have been used is of concern to both the producer and the curriculum planner. In the case of the materials prepared by the American Iron and Steel Institute and their subsequent use, as reported by teachers, it is possible to make comparisons. Educators Progress Service (EPS), in its reference work entitled Educators Guide to Free Science Materials, 14th Annual Edition, 1973, has made specific suggestions to the teacher for appropriate levels of use.

The EPS Guide indicates that "The One-Leaf Book Story of Environment and Industry" be used "in grade 7 and up" and that two teachers guides are available, one for the science teacher and the other for the social studies teacher. (217) An analysis of the data collected in the study (Table 18) indicates that fully 20 per cent of the teachers who requested the booklet used it below the levels intended by the producer.

The pamphlet or cartoon (comic) booklet "Mark Steel Fights Pollution" is described in the guide (EPS Guide: 217) in such a manner that the researchers are led to infer elementary level usage is intended, however, no specific grade level recommendation was made. The results of the study indicate that over 50 per cent usage was made at the junior and senior high school levels.

TABLE 18 NUMBER AND PER CENT OF TEACHERS WHO INDICATED USING MATERIALS, CLASSIFIED BY LEVEL OF USE - PRINTED MATERIALS

	Env. & Indust.		Mark Steel		Steel Scien.		Totals	
Level	f	%	f	%	f	%	f	%
Primary	1	-1	2	1	28	12	31	4
Intermediate	56	19	74	26	73	32	203	25
Junior High	128	43	118	41	35	15	281	35
Senior High	62	21	36	13	31	13	129	16
College	0	0	0	0	15	7	15	2
Vocational	1	-1	1	-1	1	-1	3	-1
Did Not Use	13	4	10	3	24	10	47	6
Other	9	3	10	3	8	3	27	3
No Response	23	8	37	13	16	7	76	9
Totals	294	100	288	100	231	100	813	100

When considered by guide recommendation, the pamphlet "Steel Science and Our Society" should be used in grades 5 - 8. (EPS Guide: 252) Approximately one-half of the respondents indicated that they were using the materials at the suggested grade levels. However, over 10 per cent of the respondents indicated using it at the primary level and an additional 13 per cent indicated using it at the senior high school level.

Another interesting finding which emerged from this particular facet of the study was the extremely high use of the materials upon receipt. Only six per cent of the respondents indicated that they did not use the materials after they had been received.

Examination of the data presented in Table 19 shows that the recipients used the printed materials in a variety of ways. Most frequently mentioned uses were as supplementary materials, pupil and teacher references, and as bulletin board materials.

The final analysis made concerns the respondents' intention to reuse the materials, if available. These data, presented in Table 20, are of particular importance to the producers of free and inexpensive materials. Reuse infers a degree of satisfaction with the product. In this study, 60 per cent of the respondents indicated they would reuse the pamphlets next year if they were available. Less than

TABLE 19 NUMBER AND PER CENT OF RESPONSES INDICATING USE MADE OF MATERIALS AFTER RECEIPT FROM A.I.S.I. - PRINTED MATERIALS

	Env. & Indust.		Mark Steel		Steel Scien.		Totals	
Use Made	f	%	f	%	f	%	f	%
Supp. Material	123	42	134	47	83	36	340	42
Basic Material	21	7	21	7	21	9	63	8
Teacher Ref.	47	16	38	13	69	30	154	19
Pupil Ref.	69	23	52	18	50	22	171	21
Bulletin Bd.	80	27	35	12	22	10	137	17
Enr.Mtl./Cap.	8	3	9	3	11	5	28	3
Enr.Mtl./Less Cap.	3	1	19	7	1	-1	23	3
Enr.Mtl./Class	39	13	46	16	48	21	133	16
Other	11	4	15	5	17	7	43	5

No Totals: Multiple responses received

TABLE 20 NUMBER AND PER CENT OF RESPONSES INDICATING INTENTION TO REUSE MATERIALS NEXT YEAR - PRINTED MATERIALS

	Env. & Indust.		Mark Steel		Steel Scien.		Totals	
Response	f	%	f	%	f	%	f	%
Yes	185	63	164	57	138	60	487	60
Not Sure	47	16	49	17	44	19	140	17
No	6	2	12	4	5	2	23	3
No Response	56	19	63	22	44	19	163	20
Totals	294	100	288	100	231	100	813	100

five per cent indicated they would not request these materials for future classroom use. The researchers interpret this response pattern as being highly supportive of the free instructional aids provided by the American Iron and Steel Institute.

INTERPRETATION AND RECOMMENDATIONS

Based upon these studies it is apparent that teachers do use free and inexpensive materials in the instructional programs of the schools of the United States. Teachers have indicated that the materials are effective supplementary aids usually as good as, if not better than, commercially produced materials and that will continue to be used if provided by members of the business and industrial community.

Because of the widespread acceptance and use of these materials there is a basic responsibility, shared equally by users and producers, to insure that free and inexpensive materials are utilized in an instructionally appropriate manner. A high degree of responsibility is placed upon the producers to provide those materials which most nearly meet the instructional needs of the schools. Teachers have the responsibility to make proper use of these materials.

The following discussion, based upon the findings and interpretations of the studies, as well as the opinions of the researchers, is presented. Suggestions are directed to both the producers and consumers of free and inexpensive materials.

To the producers. Producers of free and inexpensive materials should continue to more nearly define "curriculum content," that is, design them for more specific instructional use. This focusing of content may restrict the audience but it should give the materials a higher value for educational purposes.

Suggestions similar to those provided by the producers of the materials studied should be included with all free and inexpensive materials. Although the instructional guides and catalog descriptions did not result in appropriate utilization of filmstrips and printed materials in all cases, they were considered to be beneficial to the users. Therefore, producers are encouraged to provide, and in some cases more clearly define, these sources of aid to instructional planning. Indeed, producers may wish to suggest new and innovative uses for their materials, but they should provide at least minimal plans or guidelines.

Free and inexpensive materials are highly acceptable to teachers throughout the country. The producer's problem is not to gain acceptance, but to improve the product so that it more nearly meets the educational needs of the schools. Today, free materials are less "advertising materials" and are more nearly "instrucitonal aids." Producers have the opportunity and responsibility to make these materials instructionally relevant.

To the teacher. Teachers should be selective in the choice of materials they use. The selection process should include a careful perusal of the various sources of information relating to the availability of free materials. Excellent examples of preliminary screening devices are the Educators Progress Service series of catalogs and the many references in current periodical literature. Teachers should screen materials

upon receipt and make a decision concerning use in their program. The fact that materials are free does not mean they must be used.

Recommendations for further study. It is suggested that other producers examine ways in which teachers utilize their materials. As additional data become available comparisons may be made and further generalizations drawn. This effort will contribute to a further understanding of the use (and possible misuse) of free and inexpensive learning materials in classrooms throughout the nation.

BIBLIOGRAPHY

Borg, Walter H., Educational Research, An Introduction, New York: David McKay Company, Inc., 1963.

Droege, Robert C., and Albert C. Crambert, "Follow-up Techniques in a Large-Scale Test Validation Study," Journal of Applied Psychology 49:253-6, August, 1965.

DuVall, Charles R., "The Descriptive or Normative Survey Method," in Methods and Techniques of Educational Research, edited by Ralph H. Jones, Danville, Illinois: The Interstate Printers and Publishers, Inc., 1973.

"A Comparative Study of School Board Policies and Administrative Procedures for 1965 and 1970 for Dealing with Supplementary Free Materials in School Districts in Cities with Populations Over 100,000 in the United States," Research in Education 7:23, March, 1972 ERIC Document No. ED 056 381).

"A Study of Teacher Opinions Concerning Selected Free Filmstrips Provided by the American Iron and Steel Institute to Schools Throughout the United States," Research in Education 8:97, June, 1973 (ERIC Document No. ED 072 992).

"A Study of Teacher Opinions and Evaluations Concerning Selected Free Printed Materials Provided by the American Iron and Steel Institute to Individuals Throughout the United States," Research in Education (in press - scheduled for February, 1974 release).

Good, Carter V., Dictionary of Education, second edition, New York: McGraw-Hill Book Company, Inc., 1959.

and Douglas E. Scates, Methods of Research, New York: Appleton-Century-Crofts, Inc., 1954.

Kephart, W. M. and Marvin Bressler, "Increasing the Response to a Mail Questionnaire: A Research Study," Public Opinion Quarterly 22:123-32, 1958.

Krepel, Wayne J., "The APA Approach," in Methods and Techniques of Educational Research, edited by Ralph H. Jones, Danville, Illinois: The Interstate Printers and Publishers, Inc., 1973.

Oppenheim, A. N., Questionnaire Design and Attitude Measurement, New York: Basic Books, Inc., 1966.

Saterstrom, Mary H., Editor, Educators Guide to Free Science Materials, 14th edition, Randolph, Wisconsin: Educators Progress Service, Inc., 1973.

Sinclair, Thomas H., A Report About Business-Sponsored Teaching Aids, Published doctoral dissertation presented to Northwestern University, Evanston, Illinois. Dansville, New York: F. A. Owen Publishing Company, 1959.

Snelling, W. Redman, "Impact of Personalized Mail Questionnaire," Journal of Educational Research 63:126-29, November, 1969.

Van Dalen, Debold B., Understanding Educational Research, New York: McGraw-Hill Book Company, 1962.

Young, Pauline V., Scientific Social Surveys and Research, Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966.